

✓
Replace the paragraph at page 4, line 9 with the following text:

A5
According to one embodiment of the second type of re-closable packaging, said containers form the same structure closed about itself.

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Replace the paragraph at page 4, line 12 with the following text:

A6
According to one embodiment of the second type of re-closable packaging, said containers are flexible films.

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Replace the paragraph at page 4, line 18 with the following text:

A7
In a further embodiment of the re-closable packaging, the melting point of the said tearable welding layer is higher than that of said adhesive layer. The term "melting point" as regards the adhesive is intended to mean its softening point.

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Replace the paragraph at page 4, line 23 with the following text:

A8
According to a further embodiment of the packaging, said pressure-sensitive adhesive layer comprises a thermoplastic elastomer-based hot melt adhesive.

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Replace the paragraph at page 4, line 29 with the following text:

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According to a further embodiment of the packaging, said welding layers comprise polyethylene.

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Replace the paragraph at page 5, line 1 with the following text:

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The complexable layers and tearable welding layers preferably have identical compositions.

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Replace the paragraph at page 5, line 3 with the following text:

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In a further embodiment of the re-closable packaging, said structure comprising said layers (2), (3) and (4) is symmetrical in composition, said pressure-sensitive adhesive layer (3, 3') comprising two pressure-sensitive adhesive sub-layers.

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Replace the paragraph at page 5, line 8 with the following text:

A12
According to one embodiment of the re-closable packaging, said structure is obtained by collapsing the co-extrusion bubble.

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Replace the paragraph at page 5, line 14 with the following text:

A13
The invention also provides a method for producing a packaging according to the invention, comprising sealing said welding layers (4) and (5).

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Replace the paragraph at page 5, line 17 with the following text:

A14
In one embodiment of the method, said structure, comprising said support layer (1), said complexable layer (2) and said pressure-sensitive adhesive layer (3) is prepared first after which said container is prepared.

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Replace the paragraph at page 5, line 22 with the following text:

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In one embodiment of the method, said structure is laminated onto said container.

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Replace the paragraph at page 5, line 24 with the following text:

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In another embodiment of the method, said structure is prepared by collapsing the co-extrusion bubble.

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Replace the paragraph at page 6, line 16 with the following text:

A17
FIG. 1 illustrates the packaging in one embodiment of the invention, after welding. This packaging comprises a container (A) and a lid (B). Container (A) comprises a support layer (1), an optional complexable layer (2), a pressure-sensitive adhesive layer (3) and a tearable welding layer (4). The container can also comprise, between the support layer (1) and the complexable layer (2) a bonding layer (7), if necessary. One sub-portion of this container (A) is the structure (C), which comprises the layers (2), (3) and (4). Lid (B) comprises a support layer (6) and a welding layer (5) bonded together by optional bonding layer (8). The tearable welding layer (4) and welding layer (5) face each other. Lid (B) is welded to container (A) for example by die pressing, using sealing jaws of which preferably only one is a heating jaw, the latter being disposed at the lid side. In other words,

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cont

deformation of container and lid occurs in the welding region, seam (D). This deformation is characterised by a reduction and/or modification in thickness, due to

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Replace the paragraph at page 7, line 1 with the following text:

A18

softening and/or melting of certain layers which leads to creep of their components over the edges of the welding seam. The welding region (seam (D)) delimits the weakened region. Support layer (6) of the lid (B) is in general little affected by welding, as the components of the support layer have a melting point which is generally distinctly higher than that of the components of the welding layer (5). The same generally applies to bonding layer (8) of the lid. The above remarks similarly apply to support layer (1) and bonding layer (7) of container (A), which, additionally, are further from the source of heat in the preferred case where only one heated sealing jaw is used at the lid side.

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Replace the paragraph at page 7, line 14 with the following text:

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Welding conditions (time, temperature, pressure) are set conventionally so that deformation is located at the tearable welding layer (4) and welding layer (5). As adhesive layer (3) is generally malleable by its nature, and generally represents a relatively insignificant thickness of structure (C), there would generally not be melting or creep (lateral flow) throughout the totality of the thickness. As the adhesive layer substantially supports all of the deformation, complexable layer (2) will consequently, generally, not be deformed and consequently not weakened. The weakening, at the welding seam, is consequently principally generated in the tearable welding layer (4), and possibly, partially in adhesive layer (3). Welding layer (5) is not fragile and its tear strength is greater than that of layer (4), as well as the cohesive strength of adhesive layer (3). When the packaging is opened, stresses propagate and bring about rupture at the most fragile layers, in other words the tearable welding layer (4) and a part of the thickness of the adhesive layer.

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Replace the paragraph at page 8, line 1 with the following text:

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FIG. 2 shows the packaging according to the invention after opening. Tearing occurs at both sides of the welding seam (D) (the regions where the jaws operate), the effect of which is to uncover a strip composed of the torn tearable welding layer (9) and a part (10) of pressure sensitive adhesive layer (3), which remains welded to the welding layer of lid (B).

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After opening, a part of pressure sensitive adhesive layer (3) providing for re-sealing, is located on each one of the inner faces of container (A) and lid (B) of the packaging. It is now sufficient to reposition the two regions corresponding to the tear face-to-face and to exercise pressure in order to re-close the packaging. The re-sealing force (re-bonding of the adhesive to itself) is proportional to the pressure exercised for re-closing. In general, tearing in the adhesive layer leads to the latter appearing slightly cloudy due to surface irregularity of the rupture giving an iridescent effect. Re-sealing is now at a maximum when the pressure exerted renders the tear region again transparent. In effect, in this case, the continuity of the adhesive layer has been reconstituted, and this adhesive layer no longer shows any surface iridescence. Reopening and re-closing are identical to the operations described above.

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Replace the paragraph at page 9, line 19 with the following text:

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In the case where flexible pouches or bags are produced, the multilayer film forming container (A) is welded to itself. In this case, the packaging can now be thought of as comprising two joined containers, one (A) on one side of the weld and the other (A') on the opposite side of the weld, each having the same configuration. The mechanism of operation is the same as above. Also in this case, a system of sealing jaws which only apply heat on the one side will preferably be used. The portion located at the heated sealing jaw side undergoes die pressing whereas the one at the unheated side does not undergo this. In this way, upon opening, only the tearable welding layer that was situated at the heated side tears, and opening is consequently better defined. Thus, the situation is now identical to the one described previously. Container (A') could also comprise a bonding layer (7'), just like container (A). Generally, where

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Replace the paragraph at page 10, line 1 with the following text:

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flexible bags are produced, elements (A) and (A') are formed from the same structure.

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Replace the paragraph at page 10, line 3 with the following text:

A23

It is clear that the complexable layer (2) is not essential and can be omitted, for example where the sheet from which container (A) is produced has been made by extrusion. In this case, adhesive (3) will be provided directly on the support (1). In the case of co-extrusion, one can for example produce a tearable multilayer of the PET or PS type, or a

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cont

PP/hot melt type adhesive/PE multilayer on a suitable line (such as a (flat) cast co-extrusion line able to produce heat-shapeable semi-rigid sheets of the order of 500 μm). In the case of calendering, the complexable layer is generally present and one can first co-extrude a triple layer film comprising complexable PE/hot melt adhesive/tearable PE, and apply it, a bit further on, to a support film, for example a PVC film (in such a case the complexable layer is not corona treated). The support film leaving the calendar is still hot (just like, generally, the extruded triple layer film) when the triple layer film is applied. This ensures maximum avoidance of deformation of the support sheets, such as PVC sheets. Adhesion of the double layer film is improved when application thereof is done using a calendar. The final multilayer product can then be subject to hot forming or another treatment, if necessary. As against this, this complexable double layer will be generally present when the sheet from which container (A) is made is produced by a lamination process.

Replace the paragraph at page 11, line 10 with the following text:

A24

Complexable layer (2) (or layer for lamination) is located on the inner face and is designed to be bonded to the support layer (1), optionally through a bonding layer (7). This complexable layer will advantageously be Corona discharge treated (especially in case of lamination), preferably such that its surface tension is greater than 38 dynes. This layer is conventionally a polyolefin. Corona treatment facilitates keying of complexable layer (2) to support layer (1), preferably via a bonding layer (7); notably, this layer is an adhesive. Complexable layer (2) thus makes it possible:

Replace the paragraph at page 12, line 4 with the following text:

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This complexable layer is a polyolefin. This term, i.e., polyolefin, should be taken in its normally acceptable sense in the art. By way of examples we can cite homopolymers and copolymers of olefins, with other olefins or other types of monomer (such as vinyl acetate, alkyl (meth)acrylate). Specific examples are: PE (such as: HDPE, MDPE, LMDPE, LDPE, LLDPE, VLDPE, metallocene PE), PP, copolymers of PE with an alpha-olefin, EVA copolymers, etc.

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Replace the paragraph at page 13, line 1 with the following text:

A26 layer (4) is generally greater than that of welding layer (5).

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Replace the paragraph at page 13, line 6 with the following text:

A27 This layer is generally a polyolefin; the polyolefin can notably be the same as the one employed for the complexable layer.

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Replace the paragraph at page 13, line 9 with the following text:

A28 This tearable welding layer, being on the outside, will advantageously have good machinability, obtained, for example, by adding slip and anti-blocking agents facilitating sliding over the elements of the packaging machine. Such sliding will in particular be appreciated when using vertical machines. ($K_s < 0.25$, where K_s is the static coefficient of sliding). This welding layer will advantageously have hot adhesive properties (or hot resistance properties) even while the weld or seal is still hot: the seal will not re-separate when the product to be packaged falls into the bag (in the case of a vertical machine) and/or when a gas is injected from the thermoforming machine (in other words said welding layer advantageously has "hot tack" properties). For this latter property, metallocene PE will advantageously be added to the said welding layer. The formulation of this tearable welding layer will also preferably be adjusted to prevent a tacky feel, in order to avoid all undesirable sticking or any contamination by the packaged product. The fillers that can be added in order to encourage tearing are inorganic fillers, such as talc and calcium carbonate, present in amounts comprised for example between 5 and 30%, preferably between 5 and 15%.

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Replace the paragraph at page 16, line 17 with the following text:

A29 < 30% of other constituents: plasticizing oil, anti-oxidation agents, additives etc.

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Replace the paragraph at page 17, line 13 with the following text:

A30 It is also desirable that a multilayer film comprising a layer and an adhesive as above, may be transformed. One will consequently preferably choose adhesives of sufficiently high viscosity to avoid, or limit to the maximum extent, creep (which would otherwise lead to deformations such as variations in thickness, formation of "waves", etc) as well as flow of

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adhesive between the layers during thermoforming and its flowing onto the welding equipment.

Replace the paragraph at page 18, line 22 with the following text:

A31

Several processes can be used to prepare structure (C). These processes comprise cast extrusion (flat exclusion), blown film extrusion (blown bubble extrusion), etc. One valuable process is the blown film extrusion process in which, preferably, structure (C) is obtained by collapsing the co-extrusion "bubble". This embodiment is shown in FIG. 3. This embodiment produces a symmetrical structure, wherein the complexable layer (2) and tearable welding layer (4) have the same composition. If adhesive layer (3) comprises two sub-layers (3a) and (3b) respectively, then, in such embodiment, layer (3') would also comprise two corresponding sub-layers: (3a)' and (3b)'. In any event, there is now a region of weakness between the

Replace the paragraph at page 19, line 1 with the following text:

A32

two layers where 3 abuts 3'; in effect, in the re-adhesion region, the adhesive resin adheres to itself whereas in the case of one layer, the latter has been obtained by melting, leading to the formation of a homogeneous mass which is stronger thanks to its elastomeric nature. Using collapsing of the bubble, the need to modify the composition of the pressure-sensitive adhesive to be absolutely sure of achieving ready tearing within the body of the adhesive layer becomes superfluous.

Replace the paragraph at page 19, line 10 with the following text:

A33

When extruding the tube, air is generally employed for blowing (expanding) the bubble and for cooling it. The air produces a slight surface oxidation of the (hot melt) adhesive layer prior to re-bonding. The force needed to achieve tearing in the adhesive layer is smaller in the region where the layers have been rebonded, due to the slight surface oxidation thereof, compared to that within the actual layers. Such oxidation can further be favored by injecting an oxidizing agent at the bubble. Ozone taken from the Corona discharge treatment equipment can be employed as the oxidizing agent.

Replace the paragraph at page 21, line 26 with the following text:

A34
For the support film, one can employ polyolefins (cast PP, oriented PP, PE), polyamides (cast PA, copolyamide, mono- or bi-oriented PA), styrenic plastics (crystalline PS, impact PS, oriented PS), PVC, impregnated or non-impregnated papers, polyesters (cast PET, oriented PET, crystallizable PET, PET G), aluminum, impregnated films (impregnated with PVDC, PVA, and the like),

Replace the paragraph at page 22, line 1 with the following text:

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vacuum packaging metallized films (aluminum-based, in alumina, SiO_x, and the like).

Replace the paragraph at page 22, line 3 with the following text:

A36
Structure (C) is preferably laid on the support. According to this embodiment, the structure (C) is first prepared, notably by co-extruding, then this structure is applied onto the support by various techniques. It is possible to lay on this structure (C) by lamination, extrusion-lamination, hot-calendering or extrusion-coating. Depending on the technique used, the complexable layer receives an optional bonding layer.

Replace the paragraph at page 22, line 11 with the following text:

A37
In the first two techniques above, a bonding layer (7) is present between the structure of the invention and the support and provides adhesion.

Replace the paragraph at page 22, line 14 with the following text:

A38
In case of lamination, structure (C) is prepared, notably by coextrusion, then laid on the support, notably under cold conditions (*i.e.* a temperature below the melt temperature of the various films). The bonding layer can be an adhesive or glue, notably a polyurethane adhesive or glue, especially of the polyether or polyester type, in a solvent or not. A corona treatment of the complexable layer is preferred.

Replace the paragraph at page 22, line 22 with the following text:

A39
In case of extrusion-lamination, structure (C) is prepared, notably by coextrusion, then laid on the support, (notably under cold conditions), a bonding layer being placed between the structure (C) and the support, preferably by extrusion. This bonding layer can be a

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coextrusion binder of the type disclosed above. This binder will have preferably a melt temperature below the one of the support layer. Extrusion-lamination is similar to lamination, except that a binder is used in lieu of a glue. A corona treatment of the complexable layer is possible but optional.

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Replace the paragraph at page 23, line 1 with the following text:

A40

In case of hot-calendering, structure (C) is prepared, notably by coextrusion, then directly applied onto the support (1), through calenders, which heat the previously prepared films. The layers being hot, they will adhere to each other. In this case, although it is possible, it is not necessary to use a supplementary bonding layer (7), the complexable layer (2) being sufficient to ensure binding. This complexable layer can be e.g. a high content EVA layer. A corona treatment of the complexable layer is not necessary, it is not even desirable.

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Replace the paragraph at page 23, line 11 with the following text:

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In case of extrusion-coating, the structure (C) coextruded still hot (optionally with a supplementary bonding layer) is applied, while still hot, directly onto the support (e.g. a PET film).

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Replace the paragraph at page 23, line 15 with the following text:

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It is preferred that the assembly formed of all layers of the structure, the bonding layer and the support are not coextruded together, in opposition to the prior art.

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Replace the paragraph at page 23, line 21 with the following text:

A43

The lid comprises the support film (6) of the type described above, and the welding layer (5) of the type also described above. The tearable welding layer (4) and welding layer (5) will have the same composition, or differing compositions (while still however being compatible). These layers (6) and (5) can be bonded together, if necessary, by means of a bonding layer (8). This binder can be of the same type as that described above.